



**[4910-13]**

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 25**

**[Docket No. FAA-2013-0896; Special Conditions No. 25-529-SC]**

**Special Conditions:** Airbus Model A350-900 Series, Limit pilot force because of side stick controller.

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for Airbus Model A350-900 series airplanes.

These airplanes will have a novel or unusual design feature associated with side stick controllers which require limited pilot force because they are operated by only one hand. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** Effective [Insert date 30 days after date of publication in the Federal Register].

**FOR FURTHER INFORMATION CONTACT:** Todd Martin, FAA, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98057-3356; telephone (425) 227-1178; facsimile (425) 227-1320.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On August 25, 2008, Airbus applied for a type certificate for their new Model A350-900 series airplane. Later, Airbus requested and the FAA approved an extension to the application for FAA type certification to June 28, 2009. The Model A350-900 series airplane has a conventional layout with twin wing-mounted Rolls-Royce Trent XWB engines. It features a twin aisle 9-abreast economy class layout, and accommodates side-by-side placement of LD-3 containers in the cargo compartment. The basic Model A350-900 series configuration will accommodate 315 passengers in a standard two-class arrangement. The design cruise speed is Mach 0.85 with a Maximum Take-Off Weight of 602,000 lbs.

The Airbus Model A350-900 series airplane is equipped with two side stick controllers instead of the conventional control columns and wheels. This kind of controller is designed for only one-hand operation. The requirement of Title 14, Code of Federal Regulations (14 CFR) 25.397(c), which defines limit pilot forces and torques for conventional wheel or stick controls, is not adequate for a side stick controller. Special conditions are necessary to specify the appropriate loading conditions for this kind of controller.

### **Type Certification Basis**

Under Title 14, Code of Federal Regulations (14 CFR) 21.17, Airbus must show that the Model A350-900 series meets the applicable provisions of 14 CFR part 25, as amended by Amendments 25-1 through 25-129.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Model A350-900 series because of a novel or unusual design feature, special conditions are prescribed under § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Model A350-900 series must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34 and the noise-certification requirements of 14 CFR part 36. The FAA must issue a finding of regulatory adequacy under § 611 of Public Law 92-574, the “Noise Control Act of 1972.”

The FAA issues special conditions, as defined in 14 CFR 11.19, under § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

### **Novel or Unusual Design Features**

The Airbus Model A350-900 series airplane will incorporate the following novel or unusual design feature: a side stick controller for only one-hand operation by wrist and not by arms.

### **Discussion**

Special conditions for Airbus side stick controllers have been developed and applied during previous Airbus certification programs. These special conditions are also appropriate for the Model A350-900 series side stick controller.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

## **Discussion of Comments**

Notice of proposed special conditions No. 25-13-27-SC for Airbus Model A350-900 series airplanes was published in the *Federal Register* on December 17, 2013 (78FR76248). No comments were received, and the special conditions are adopted as proposed.

## **Applicability**

As discussed above, these special conditions apply to Airbus Model A350-900 series airplanes. Should Airbus apply later for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

## **Conclusion**

This action affects only certain novel or unusual design features on the Airbus Model A350-900 series airplanes. It is not a rule of general applicability.

## **List of Subjects in 14 CFR Part 25**

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

## **The Special Conditions**

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Airbus Model A350-900 series airplanes in lieu of § 25.397(c), which are identical to A320, A340, and A380 special conditions on the same subject:

For the Airbus Model A350-900 series airplane equipped with stick controls designed for forces to be applied by one wrist and not arms, the limit pilot forces are as follows:

1. For all components between and including the handle and its control stops.

| <b>PITCH</b>     | <b>ROLL</b>        |
|------------------|--------------------|
| Nose up 200 lbf. | Nose left 100 lbf. |

2. For all other components of the side stick control assembly, but excluding the internal components of the electrical sensor assemblies, to avoid damage as a result of an in-flight jam.

| <b>PITCH</b>       | <b>ROLL</b>        |
|--------------------|--------------------|
| Nose up 125 lbf.   | Nose left 50 lbf.  |
| Nose down 125 lbf. | Nose right 50 lbf. |

Issued in Renton, Washington, on April 22, 2014.

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